# Simplified Installation Guide rev1.3

*These instructions are used for both the Open xL and Monitor xL versions of xL Security Equipment. A red dot on xL equipment and its packing material will identify it as the Open xL version.*

VEREX
A UTC Fire & Security Company

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NOTE: For advanced keypad configurations programming, see the Advanced Programming Guide 21-3602E.

- ► These instructions are used for both the Open xL and Monitor xL versions of xL Security Equipment.
- ► A red dot on xL equipment and its packing material will identify it as the Open xL version.
- ► Model numbers ending with a "T" will identify the Open xL equipment versions.
- ► Open xL and Monitor xL versions of xL Security Equipment can not be used together.
- ► VBUS devices can be used with both Open xL and Monitor xL versions of xL Security Equipment. VBUS devices are not used with ISM equipment.
- ► Only Monitor xL Security Equipment can be used to upgrade a Monitor ISM security system. The Open xL version is not used with Monitor ISM equipment.
- ► Only Monitor xL Director Software can be used to upgrade Director Software that communicates with a Monitor ISM security system. The Open xL Director Software is not used with Monitor ISM equipment.
- ► Open xL, Monitor xL and ISM systems can communicate to the same HSC-IP Receiver. However, the Open xL system will require an Open xL HSC-IP Module to communicate with the HSC-IP Receiver.
- ► A regular IP Module (non HSC-IP) can be used by an Open xL, Monitor xL or ISM system if they are only communicating to the Monitor xL or Open xL Director Software.
- ► Only Monitor xL Director Software can be used with a Monitor xL Security System.
- ► Only Open xL Director Software can be used with an Open xL Security System.
- ► Confirm that the correct firmware is used when upgrading a security system's firmware. Upgrading an Open xL security system firmware with Monitor xL firmware can disrupt operations on a system wide scale. An Open xL system must be upgraded with Open xL firmware. The same applies to only using Monitor xL firmware to upgrade a Monitor xL system.


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### Document Revision History

| Revision | Primary Updates |
|---|---|
| 4.9 (20 05 2008) | xL version 4.9 Release |

V4.4 Firmware Introduction: Refer to 21-3601E rev1.1

V4.9 Firmware Introduction: Refer to 21-3601E rev1.3

## *In This Issue:*

Rev1.3 Simplified Installation Guide

- Open xL version notices are introduced.

### Industry Canada Customer Information

NOTICE:
This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

The Ringer Equivalence Number (REN) assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

The REN for the xL using the North American Modem is 0.1
The REN for the xL using the Worldwide Modem is 0.0

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. The precaution may be particularly important in rural areas.

**Caution:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

**NORTH AMERICA:**

### Customer Instructions Pertaining to FCC Regulations

This equipment complies with the Federal Communications Commission (FCC) rules and regulations governing telephone equipment and the Technical Requirements for Connection to the Telephone Network published by the industry's Administrative Council for Terminal Attachments (ACTA). On modem board of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.
This equipment is designed to be connected to the telephone network or premises wiring using a hard wired connection that does **NOT** rely on a modular jack. If a modular jack is installed, it is the responsibility of the installing company to ensure that the jack and/or plug is compliant with the criteria of the telecommunication industry.
The Ringer Equivalence Number (or REN) is used to determine the number of devices that may be connected to a telephone line. Excessive REN's on a telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total REN's, contact the local telephone company.
The REN for the xL using the North American Modem is 0.2
The REN for the xL using the Worldwide Modem is 0.0
**CAUTION:** If this equipment (xL) is deemed potentially harmful to the telephone network, the telephone company will attempt to notify you in advance of discontinuing service. . If advance notice is not practical, the telephone company will notify you as soon as possible. If service is disconnected, you will be advised of your right to file a complaint with the Federal Communications Commission (FCC) should you believe it necessary.
The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of this equipment. Should this occur, advance notice will be provided to you in order for you to make necessary modifications to maintain uninterrupted service.
If trouble is experienced with this equipment (xL), for repair or warranty information, please contact the installing company.

If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

There are no user serviceable parts which may be repaired by the customer. All repairs must be performed by an authorized dealer representative.

This equipment cannot be used on public coin phone service provided by the telephone company. Connection to party line service is subject to state tariffs. (Contact the state public utility commission, public service commission or

corporation commission for information.)

The xL system complies with the requirements of EN 60950, Safety of Information Technology. To maintain compliancy, it is essential that the recommendations listed below be followed.

### Mains Supply

The xL system is intended to be permanently connected to the A.C. power source. Ensure that a readily accessible two-pole disconnect device (circuit breaker) is incorporated in the building installation wiring to disconnect the equipment in case of servicing. The earth conductor to which this device is connected to shall be clearly identified. It is important that the mains supply be connected in accordance to national electrical wiring codes and should only be carried out by authorized persons.

The xL control cabinets have been provided with cable knockouts on the sides, top and bottom, these are intended for the attachment of conduit. Ensure that the mains cable entering the enclosure is securely fastened using cable ties and that it's kept separate from all other data cables.

Some xL models primarily intended for regions with a 230VAC supply will come with a built-in step-down transformer. The mains fuse used on these units is a 500mA, 250V fast blow (Verex p/n 342-0005). When replacing, ensure that only the same or exact equivalent is used. Once again ensure that the mains cable is securely fastened and kept clear of all data cables.

For those units not supplied with a built-in transformer, the xL requires 16VAC input at TB1 on the main board. Use a 110VAC to 16VAC, minimum 40VA step-down, energy limited Class II transformer wired into a protected branch circuit. Only certified transformers should be used whose output is designated as SELV. The current draw from these units should not exceed 1.8Amps; refer to the current draw of each unit prior to connecting to the control panel. An additional power supply will be required when the current limit of the main panel has been reached.

## WARNING NOTICE:

### NORTH AMERICA

### AUSTRALIA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate protection measures.

**WARNING:** Changes or Modifications not expressly approved by VEREX Technology could void the user's authority to operate this equipment.

# CE – Conformity

The xL System described in this manual conforms to the requirements of the Council Directive 89/336/EEC – The EMC Directive and 73/23/EEC – The Low Voltage Directive. 1999/5/EC-The R&TTE Directive. To maintain compliancy with this directive, it is essential to adhere to the installation recommendations described within this manual.

**Standards to which Conformity is Declared:**

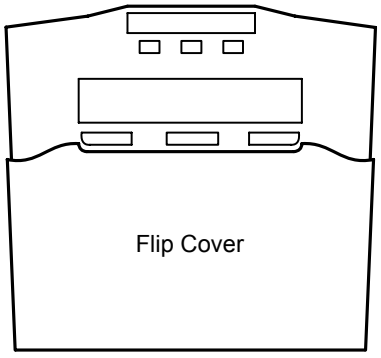
- CISPR 11:2003 / EN55011:2003 – Class A – Limits and methods of measurements of radio disturbance characteristics for industrial, scientific and medical (ISM) radio-frequency equipment.
- CISPR 22:2003 / EN55022:2003 Class A – Limits and methods of measurement of radio disturbance characteristics of information technology equipment.
- EN 50130-4:1995 – Electromagnetic compatibility – product family standard: Immunity requirements for components of fire, intruder and social alarm systems.
- EN 60950-1: 2001 – Safety of Information Technology
- TBR21:1998 – Terminal Equipment Attachment requirements for the connection to the analogue PSTN

| Standard | Description | Severity Applied | Performance Criteria |
|---|---|---|---|
| IEC 1000-4-2<br>EN 61000-4-2 | Electrostatic Discharge | 6kV Contact Discharge (direct and indirect)<br>8kV Air Discharge | A<br>A |
| IEC 1000-4-3<br>EN61000-4-3<br>ENV 50140/240 | Radiated RF Immunity | 10V/m, 80-2000 MHz, 1 kHz 80% AM modulation<br>10V/m 80-2000 MHz, Pulse Modulation with 1 Hz Square | A<br>A |
| IEC 1000-4-4<br>EN 61000-4-4 | Electrical Fast Transient | +/-2kV on AC lines<br>+/-1kV on DC & I/O lines | A<br>A |
| IEC 1000-4-5<br>EN 61000-4-5 | Surge Withstand Immunity | +/-2kV Common Mode on AC lines<br>+/- 1kV Differential Mode on AC Line<br>+/-2kV Common Mode on I/O lines. | A<br>A<br>A |
| IEC 1000-4-6<br>EN 61000-4-6<br>ENV 50141 | Conducted RF Immunity | 10Vrms, 0.15-100 MHz, 1kHz 80% AM modulation on AC lines<br>10Vrms, 0.15-100 MHz, 1kHz 80% AM modulation on I/O lines<br>10Vrms, 0.15-100 MHz, Pulse Modulation with 1 Hz Square. | A<br>A<br>A |
| IEC 1000-4-11<br>EN61000-4-11 | Dip<br><br>Dropouts<br><br><br><br>Voltage Variation | 60% for 0.5, 1, 5 & 10 cycles repeated 3 times every 10s<br>30% for 0.5, 1, 5 & 10 cycles repeated 3 times every 10s<br>100% for 0.5, 1, 5 & 10 cycles repeated 3 times every 10s.<br><br>+10%, -15% for AC from nominal | A<br>A<br>A<br><br>A |
| IEC 1000-3-2<br>EN61000-3-2 | Harmonic Current Emissions | Class A (Other), Class B (Portable Equipment), Class C (Lighting Equipment) or Class D (Special Current Waveform) | PASS |
| IEC 1000-3-3<br>EN61000-3-3 | Voltage Fluctuation and Flicker in Low-Voltage Supply Systems | Voltage Fluctuation<br>Flicker | PASS<br>PASS |

**Not verified by UL**

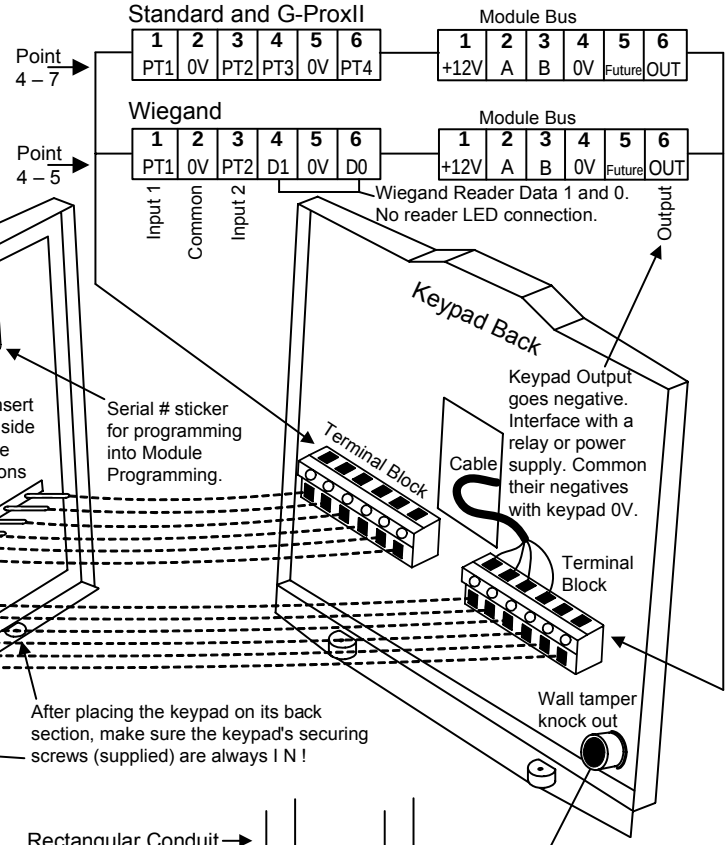
# Hardware Components

## LCD Keypad



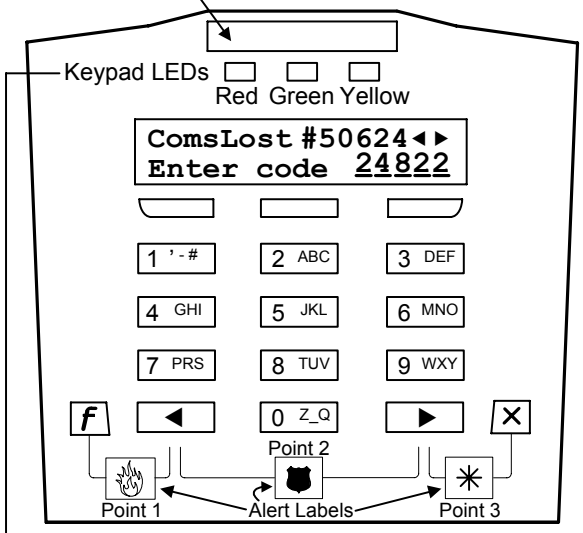

**Ratings:**
LCD Keypad with Reader
Input: 12VDC, 110mA
Output: 12VDC, 1x10mA
LCD Keypad
Input: 12VDC, 95mA
Output: 12VDC, 1x10mA
Temp for both: -10°C to +55°C (14°F to 131°F) @ 93%

Keypad Terminal Block Wiring




Module Point Assignment: 8 points.
First point: Fire Alert buttons
Second point: Panic (Hold-Up) buttons
Third point: Auxiliary Alert buttons
Points 4 – 7 are hard wire inputs 1 – 4 on the Standard and G-ProxII version.
Points 4 – 5 are hard wire inputs 1 – 2 on the Wiegand version. All unused points are skipped.

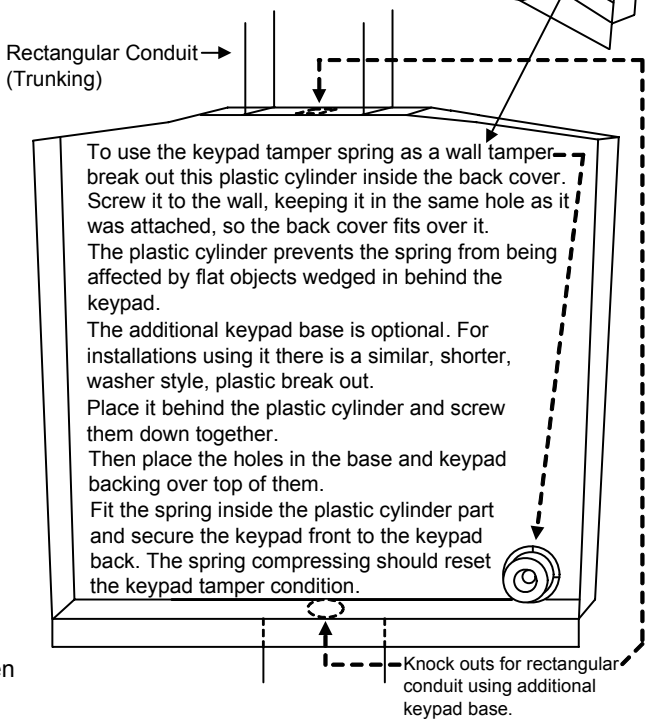
Apply dealer's logo label (supplied) in the indented space at the top of the keypad. Apply the Alert Button labels as required.




Red Flashing: Protection ON
Solid: Partial protection (STAY)

Green On Always with power present.

Yellow On when trouble condition present. Flashing when there is no AC mains.


Rectangular Conduit (Trunking)
To use the keypad tamper spring as a wall tamper break out this plastic cylinder inside the back cover. Screw it to the wall, keeping it in the same hole as it was attached, so the back cover fits over it.
The plastic cylinder prevents the spring from being affected by flat objects wedged in behind the keypad.
The additional keypad base is optional. For installations using it there is a similar, shorter, washer style, plastic break out.
Place it behind the plastic cylinder and screw them down together.
Then place the holes in the base and keypad backing over top of them.
Fit the spring inside the plastic cylinder part and secure the keypad front to the keypad back. The spring compressing should reset the keypad tamper condition.
Knock outs for rectangular conduit using additional keypad base.

3 Keypad Versions

- LCD Keypad P/N 111-3610: standard keypad includes 3 programmable alert button inputs, 4 hardwire alarm input points and 1 output point.
- LCD Keypad with RF reader P/N 111-3611: keypad includes 3 programmable alert button inputs, 4 hardwire alarm input points and 1 output point. Includes a built-in RF G-Prox reader.
- LCD Wiegand Keypad P/N 111-3612: keypad includes the capability to connect an external Wiegand reader to it. Keypad includes 3 programmable alert button inputs, 2 hardwire alarm input points and 1 output point.

# LCD Keypad Notes

### When a keypad is first powered

It will display “ComsLost # (e.g.) 50624”. The keypad’s module bus communications are not on line and the keypad’s module bus, unique serial # is displayed for programming into the system. Explained on page 9.

- The left and right arrow keys in the upper right screen corner refer to the left and right arrow keypad buttons. They can be pressed to display.
  – The keypad version e.g. “G-prox II”
  – The module bus voltage e.g. 13.054V
  – Keypad firmware version e.g. V0.6

**Main Test Menu Selections:** Using a keypad that has just been powered and not programmed into module programming, press any number key five (5) times to display the “Main Test Menu”. This screen will also display the current module bus power.

– Keypad tone volume adjustment. Use the left and right arrow keys to indicate the various levels, visually and audibly. Press “SAVE” to save the setting or “RST” to return the volume setting to the factory default.
– PRESS KEY allows you to press keypad keys and ensure they are working properly by seeing their alpha/numerical value appear on the screen, hearing a keypad tone and seeing the keypad red and yellow lights turn on or off after each key pressed.
– CARD: for a G-PROXII keypad will display a card’s number and if the card is ok or not when a card is held to the keypad.

### Pressing the keypad “F” key 5 times for keypad serial number.

- After a keypad has been logged on to from the “ComsLost” screen using e.g. the service user’s code e.g. 2482 or programmed into the system or while being programmed in the Module Programming Section
- Press the “ **f** “ keypad key five (5) times. This will cause the screen to display the type of keypad and the keypad’s serial number.

### User’s Access Card Quick Enrolment

- After a G-ProxII keypad has been programmed into the system, enter User Programming from the regular keypad screens (not programming screens).
- Proceed through the screens for assigning a user.
- When the selection is made to assign a card for the user, hold the user’s card to the keypad.
- The card number will appear on screen. The card has been assigned to the user. Press the “X” escape keypad key to return to the main menus.

## Point Mapping

- Some system expansion modules are assigned with inputs and outputs such as the 8 and 16 point Expanders. In the Advanced Module programming section the limits for the amounts of inputs and outputs start at 4 and 8 at a time and increase from there.
- When assigning e.g. inputs to an 8 point Expander, if the main control board has been assigned with 12 inputs, inputs 001 to 012, the inputs on the 8 point Expander would start at inputs 013 to 020. This same style of point organizing continues throughout the system and is known as “Point Mapping”.
- Another characteristic that can occur is not all points assigned to a module may be used. E.g., a Standard with GProx LCD keypad assigned as the first module on the module bus. For all inputs to be used on this keypad, 8 inputs must be assigned. The first 3 inputs are assigned to the keypad’s alert buttons: Fire, Police, and Auxiliary. If the main control board has inputs 001 to 012, these alert inputs will be 013 to 015. The next four are assigned to the keypad’s hardwire inputs: 016 to 019. This leaves input 020 which is not used and must be skipped. The programmable inputs for the next module assigned with 8 inputs after the keypad will be 021 to 028.
- This condition can also occur with outputs. E.g., an 8 point Expander comes with outputs 1 and 2. The 8 point Expander does not have physical outputs 3 to 8 on the board. If more outputs are needed with the 8 point Expander, an output daughter card can be plugged on to the main board. The daughter board is designed to represent outputs 9 to 16 on the Expander. This means 16 outputs need to be assigned to the 8 point Expander Module. Outputs 1 and 2 are programmable, 3 to 8 do not exist and must be skipped. The daughter card’s 8 outputs then begin programming from 9 to 16. If a 16 point Expander is used and all 16 outputs are needed, 16 outputs are assigned to the module. A daughter card is again used and with this module, all 16 outputs are available and programmable.

# Main Control Module

NOTE: Any expansion modules used with the xL system, like the 8 and 16 Point Expanders, can also be used on the xL Main Control Unit, Module Bus (SNAPP).

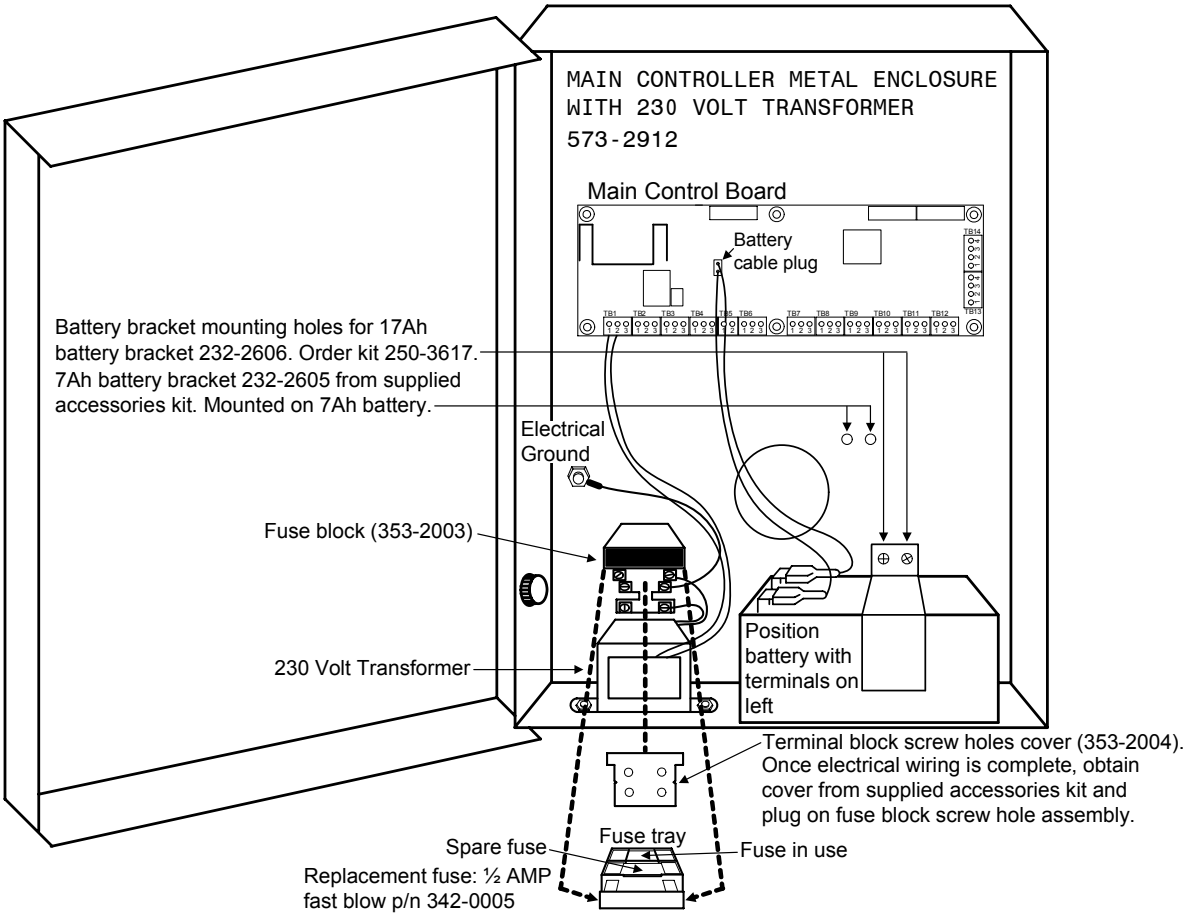
## Mounting a Control Box

On Dry Wall Use 1/8" hollow wall, expansion anchors (p/n 331-8755). Unscrew the screws from the anchors. Hold the control box on the mounting surface. Mark the mounting holes. Force a starter hole in each mark with a sharp tool e.g. a screw driver with a small, flat edge. Hammer the anchors into each hole. Align the box mounting holes over the anchor holes and screw in the anchor screws until tight.

On Concrete Surface Hold the control box on the mounting surface. Mark the mounting holes. Use a hammer drill with a 3/16" carballoy drill bit and make 1" deep holes in each marking. Insert a # 6-8 plastic anchor (p/n 331-8470) in each hole and hammer them in. Use # 8 X 1", Phillips, wood screws (p/n 738-2169) to screw into the plastic anchors and mount the box.

## Control Box Dimensions (height, width, depth)

North American Main Control Unit 573-6801: H355mm x W254mm x D86mm (H14" x W10" x D3, 3/8")
Main Control Unit with 230V transformer (European) and IPSU (intelligent power supply unit) Expander 573-2912:
H470mm x W305mm x D89mm (H18, ½" x W12" x D3, ½")
Input Expander 573-4714: H259mm x W203mm x D76mm (H10, 3/16" x W8, 1/8" x D3")


MAIN CONTROLLER METAL ENCLOSURE
WITH 230 VOLT TRANSFORMER
573-2912
Main Control Board
Battery cable plug
Battery bracket mounting holes for 17Ah battery bracket 232-2606. Order kit 250-3617. 7Ah battery bracket 232-2605 from supplied accessories kit. Mounted on 7Ah battery.
Electrical Ground
Fuse block (353-2003)
230 Volt Transformer
Position battery with terminals on left
Terminal block screw holes cover (353-2004). Once electrical wiring is complete, obtain cover from supplied accessories kit and plug on fuse block screw hole assembly.
Fuse tray
Spare fuse
Fuse in use
Replacement fuse: ½ AMP fast blow p/n 342-0005

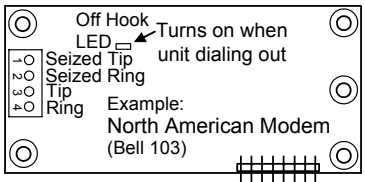
### Procedure for Cold Booting the Main Control Board and Clearing Memory

1. Remove all power from main control board.
2. Insert the Program Reset Jumpers (CFG0 and CFG1) horizontally. See Program Reset Jumpers on the right side of the main control module in the "Main Control Module" diagram.
3. Apply AC Mains power.
4. The Status and Trouble LEDs will flash on and off together slowly.
5. Remove the 2 jumpers.
6. The same LEDs will momentarily flash rapidly together. (Controller processing)
7. The trouble light will turn off and only the Status LED will flash rapidly.
8. Proceed through the following "Powering on the System for the First Time and Understanding How to Program the System Using the LCD Keypad" section.
9. The keypad will display regular screens and only the Status LED will flash slowly to indicate a normal condition.
10. The memory has been returned to factory defaults. Reconnect all power.

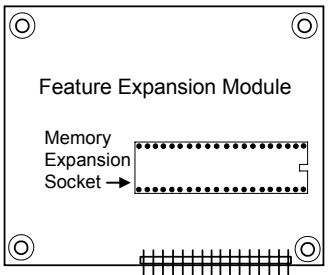
NOTE: Remove enclosure knock-outs before installing circuit boards.

Unpack the Modem and Memory Expansion Modules, if included, in package. With power disconnected, plug them into the main control board's Modem and Memory Expansion Sockets. Secure them to their control cabinet stand-offs with the supplied screws.

NOTICE: Use minimum 26AWG UL/CSA/or equivalent approved telephone cable.

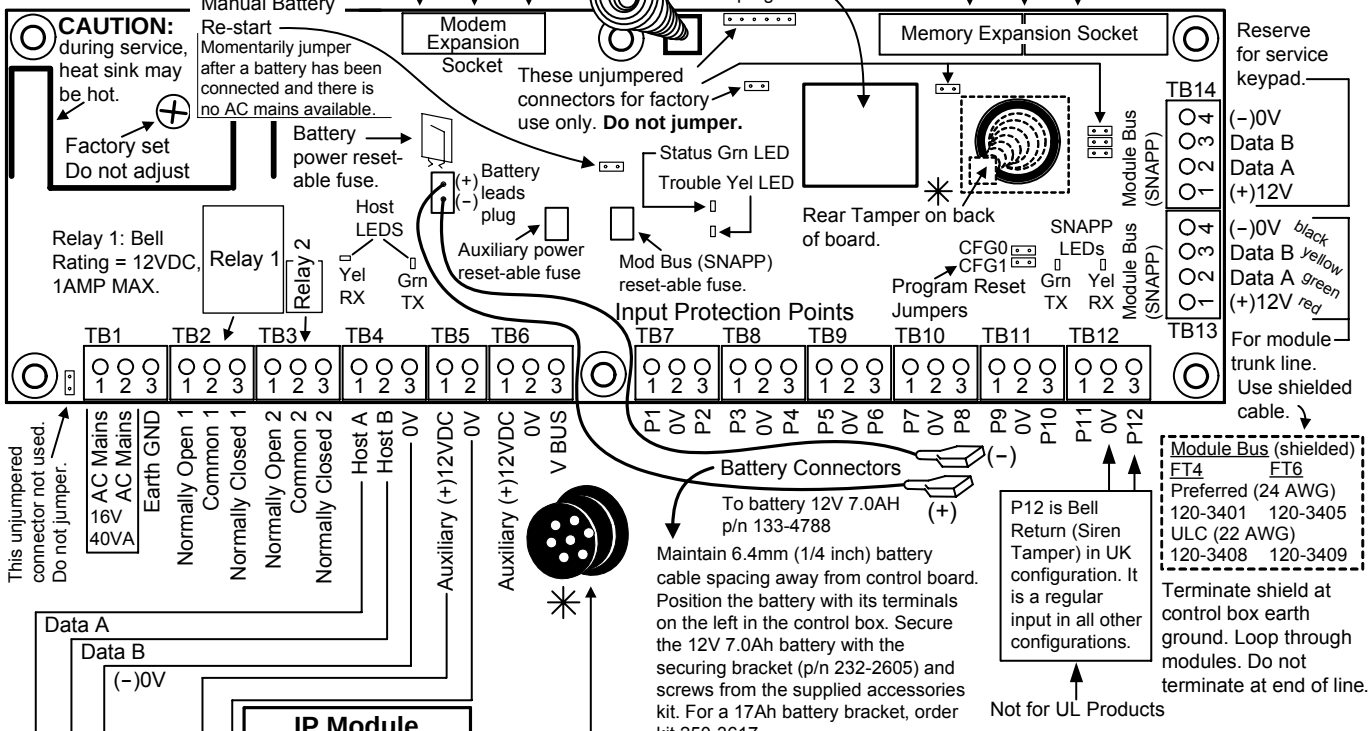



The control box tamper spring is included in the accessories kit. Fit it on to the main board cover tamper button.




NOTE: Connecting 2 un-programmed keypads on the module trunk will cause one to become a service tool and the other will not be accessible. All programmed keypads will function normally.

## Main Control Module




Data A
Data B
(−)0V

### IP Module

Network
Comms to the Director Software PC

Red (+) 12VDC
Black (−) Neg. GND
Blue RS232 TX (SIP)
Orange RS232 RX (SIP) Security IP Receiver

**TB4 RS485 Host Communications** To connect to an external modem, use the 650-9061 Converter. The main control board can not dial out to the Director software.

Green RS485 A (Director Sftwr)
Yellow RS485 B (Dir Sftwr)

(+)12V
Direct Connect to the Director Software PC

**RS485 Converter**
P/N 650-9061
DB9 Plug in to PC Comms Port

1 2 3 4
green Data A
white Data B
black (−)0V

RS485 Communication Cable
P/N **120-3401** (24 AWG, 4wires, shielded)
Cable Shield: Connect to the chassis/earth ground at main control box (do not ground at the PC)

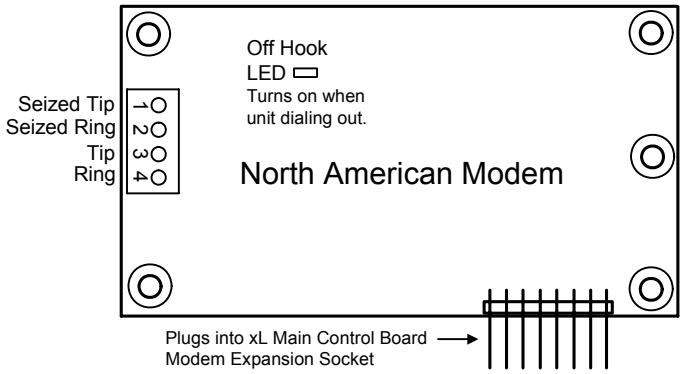
**Anti-Attack Bushing Cap** (p/n 364-5102) covers the rear tamper spring. It fits inside an **" O " Ring Bushing** (p/n 364-5103) that fits inside the metal cabinet's rear wall, anti-tamper spring, knock-out. Leave the O ring bushing and cap IN if the rear tamper is not used. If the rear tamper is used, remove the cap and the O ring with the edge of a flat screw driver. Discard the O ring. Align the cap to insert in the tamper spring, knock-out hole on the control cabinet back. Screw the cap by its center hole to the mounting surface. Place the control cabinet over it, allowing the rear tamper spring to fit inside the cap. The cap will insert in the metal cabinet's tamper spring, knock-out hole. Complete securing the metal cabinet to the mounting surface.

| Module Description (voltage 12VDC) | Current Rating (mA) |
|---|---|
| LCD Keypad | – 95 (includes 10mA /1 o/p) |
| LCD Keypad with Reader | – 110 (includes 10mA /1 o/p) |
| North American Modem | – 45 |
| Worldwide Modem with 8 o/p STU | – 145 (includes 10mA / 8 o/p) |
| Feature Expansion Board | – 100 |
| 8 Transistor Output Board | – 135 (includes 10mA / 8 o/p) |
| 8 Relay Output Board | – 155 |
| 16 Point Expander Board | – 100 (includes 10mA / 2 o/p) |
| 8 Point Expander Board | – 85 |
| 8 Input VBUS Expander Board | – 35 |
| Power Supply Board | – 50 |

MAIN CONTROL MODULE RELAY OUTPUTS
TB2 Relay 1: 5AMPS Resistive, 1 AMP Inductive.
TB3 Relay 2: 1 AMP Resistive, 0.1 AMPS Inductive.

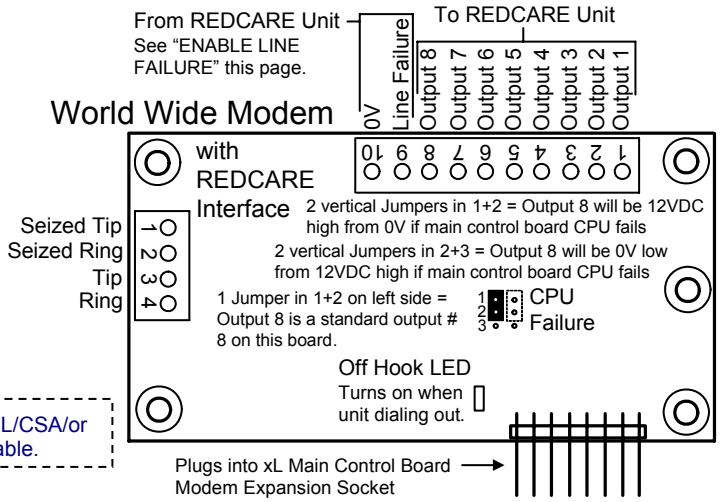
## North American Modem

(Bell 103, 300 baud)
For Director Software Communications to Feature set 3




## World Wide Modem (2400 baud)

For Director Software Communications to Feature set 7
CPU Failure available with main control module firmware 4.3 or greater.

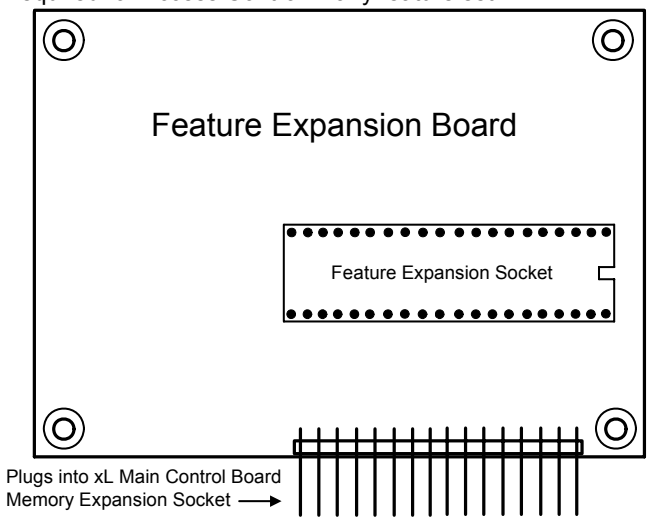



**Notice:** Use minimum 26AWG UL/CSA/or equivalent approved telephone cable.

**NOTE:** Bell 103 and World Wide Modems will call Director Software manually to their Feature Set limitations above. An external modem must be used for Director communications above Feature set 7. An external modem connected to the main control module can not call Director. See the previous Main Control Module detail. Director can call the main control module and maintain a "stay connected" send and receive session using an external modem. Alarm reporting is not possible with an external modem. Alarm reporting is only done with Bell 103 and WW Modems or IP to SIP.

## Feature Expansion Board

Required for Access Control in any feature set.




**WW Modem "CPU Failure" available with main control module firmware 4.3 or greater.**

**CPU Failure** (WW Modem)
Output 8 must be programmed as "System Fault" in System Outputs. Use Director Software outputs or Simplified or Advanced (B000:00, System Outputs #56) keypad programming. For a negative to positive output, it can be left defaulted. For a positive to negative output, it must also be programmed to be inverted.

### ENABLE LINE FAILURE on WW Modem

This feature is used to monitor for line faults from switched communicators such as Redcare
NOTE: The WW Modem must be plugged into the main control module.

Simplified Configurations: Comms (Communications) Configure Group
– Enable Line Failure: Default: No (UK ACPO = ✓yes)
– Line Fail Polarity: Positive 12VDC going to Negative 0V or Negative 0V going to Positive 12VDC. Default: Positive

Advanced Configurations: S005↓03
– Field 2: Parallel STU 8OP Supports Line Fail: ✓(yes) □ (no) Default: no (UK ACPO = ✓yes)
– Field 3: Parallel STU 8OP Line Fail Negative Polarity: ✓(yes) □ (no) Default: no = Positive Polarity

STU (subscriber terminal unit)
Enable Equipment failure point E16 (HSC, Security IP, Trouble). Set delay as 01 immediate in Simplified or Advanced programming. If the WW Modem has a Line Failure condition, it will be indicated by an HSC fault.
HSC (High Security Communications) is a proprietary communications of CSG Security Inc. and not used in all markets.

# Wiring Specifications

- **Earth Grounds:**
  Recommended: 18 AWG, stranded & insulated;
  Good: Standard 22 AWG quad cable (use all 4 wires).
- **Module Bus (RS485) Cabling** (device comms & power)**:**
  Recommended: 24 AWG, 4 conductors, **Shielded Twisted Pair**,
  120 Ω impedance, low capacitance, 41 pF / meter or
  12.5 pF / foot (such as Belden 9842).
  ULC: 22 AWG, 4 conductors, **Shielded Twisted Pair**, low capacitance.

For regions that require CE conformity, C-Tick conformity or the equivalent the recommended Module Bus cabling bus wire type must be used.

| **Cabling P/Ns:** | **FT4** | **FT6** |
|---|---|---|
| Module Bus (shielded) | | |
| Preferred (24 AWG): | 120-3401 | 120-3405 |
| ULC (22 AWG): | 120-3408 | 120-3409 |
| **Note:** Max. distance may be reduced with the ULC cable. | | |
| Reader cable (24 AWG shielded): | | |
| **6** Conductors: | 120-3402 | 120-3406 |
| **10** Conductors: | 120-3403 | 120-3407 |
| **Note:** ULC requires 22 AWG shielded cable. | | |
| Power (18 AWG): | 120-3400 | 120-3404 |
| I/O (quad): | 120-3410 | 120-3411 |

- **Max. Length:** Up to **610 m** / **2000 ft.** of cable on a Module bus port.
- NOTE: For longer cable distances, and/or where many expansion modules are connected on one cable (daisy chained, star wiring configurations are not acceptable) a **150** Ω 'terminating' resistor will need to be installed across A and B communication terminals of the last module on the 'bus' cable. If necessary, add a second resistor at the panel end module bus A and B if it is confirmed that the panel connector is the "end of line" at that end.
- **Separate Power (or door strike) Wiring:**
  Recommended: 18 AWG, stranded & insulated
  (2 conductors; colour-coded is preferable);
  Good: 22 AWG, 2 conductors, insulated.

**Notice:** Use minimum 26AWG UL/CSA/or equivalent approved telephone cable.

- **Inputs/Sensor Cabling:**
  22 AWG, 2-wires (For electrically noisy environments, use twisted pair, and/or shielded cable.)
- **Outputs/Signalling:** 22 AWG, 2 conductors.
- **Reader Cabling:** 24 AWG (**ULC: 22 AWG**), **shielded** (Max: 150 m / 500 ft.)
  Basic reader (no LEDs, buzzer control, or tamper): **4** Conductors;
  Reader with LED(s): **6** conductors;
  Reader with LEDs, plus buzzer and tamper: **9** conductors.

**Notice:** Elevator controller and condominium keypad installations include unique power and cabling aspects. Always refer to the **installation instructions** provided with each device.

**Modem/PC Link:** Use kit provided, or 22/24 AWG low-cap cable (**not** reader cable). Shielded cable is recommended.
RS485 (shared cable or modem): 3 wires, see Module bus spec. above.

### UL Listed Residential Fire Systems

The class 2, Class3, and power-limited fire alarm circuits are installed using type FPL, FPLR, or FPLP cables or substitute cable permitted by the National Electric Code ANSI/NFPA 70, and the Class 2, Class 3 and powered-limited fire alarm circuit conductors extending beyond the cable jacket are separated a minimum of 6.4mm (1/4 inch) or by nonconductive tubing or by a nonconductive barrier from all other conductors.

# Power Limits and Standby Power

The following information provides the safe operating currents for the xL control and modules. The additional power supplies, including standby DC power to support the required current loads for the installations is the responsibility of the installing company.

When calculating power requirements for installations; the backup requirement of local authorities such as UL, ULC or European EN50131 must be taken into consideration.

**Main Control Unit**
Reference P/N 950-3600, 950-3601, 950-3602

North America, UL Listed Products
INPUT: 16.5VAC, 2.5A, 60W, 60Hz
OUTPUT: Auxiliary, 12VDC, 1.0A
Module Bus, 12VDC, 750ma

Total current draw with the auxiliary and module bus must not exceed 1.0A

Europe
For units that include the mains transformer within the control cabinet.
INPUT: 230VAC, 0.26A, 60W, 50Hz
OUTPUT: Auxiliary, 12VDC, 1.0A
Module Bus, 12VDC, 750ma
Total current draw with the auxiliary and module bus must not exceed 1.0A

**Power Supply Unit**
Reference P/N 950-3650, 950-3651

North America
INPUT: 16.5VAC, 2.5A, 60W, 60Hz
OUTPUT:12VDC, 1.0A

Europe
For units that include the mains transformer within the control cabinet.
INPUT: 230VAC, 0.26A, 60W, 50Hz
OUTPUT: 12VDC, 1.0A

**BATTERY STANDBY**
The table below provides a guideline for the load and time that will be provided by a 7 or 17ahr battery. Ensure the correct cabinet size is used as only the larger heavy grade enclosure (573-2912) can accommodate the 17Ahr battery.

| Time | 7Ahr | 17Ahr |
|---|---|---|
| 24hours | 280ma | 600ma |
| 30hours | 230ma | 500ma |
| 72hours | ------ | 280ma |

- Installation requiring ULC listing requires that 24hours of back up power be provided in cases of failure of the Mains AC.
- Installations requiring UL listing for Bank Safe and Vaults requires that 72hours of backup power be provided in case of failure of the Mains AC.
- Installation requiring conformity to the European EN50131 series of standards requires that 30hours of backup power be provided in case of failure of the Mains AC (note, for the U.K. the requirement is 24hours).
- The 24hours and 30hours of backup will be provided after a minimum recharge time of 24hour.
- The 72hours of backup will be provided after a minimum recharge time of 72hours.

# VBUS

- VBUS is an internal communication bus that related VBUS modules are used with. The VBUS is not intended for external use. It has been designed to be used in a protected enclosure with adjoining interconnection between modules in the same enclosure. It communicates with the main control over the Module Bus (SNAPP) which is for external communications.
- VBUS and VBUS modules allow the system to be expanded without adding additional modules on the main Module Bus (SNAPP).

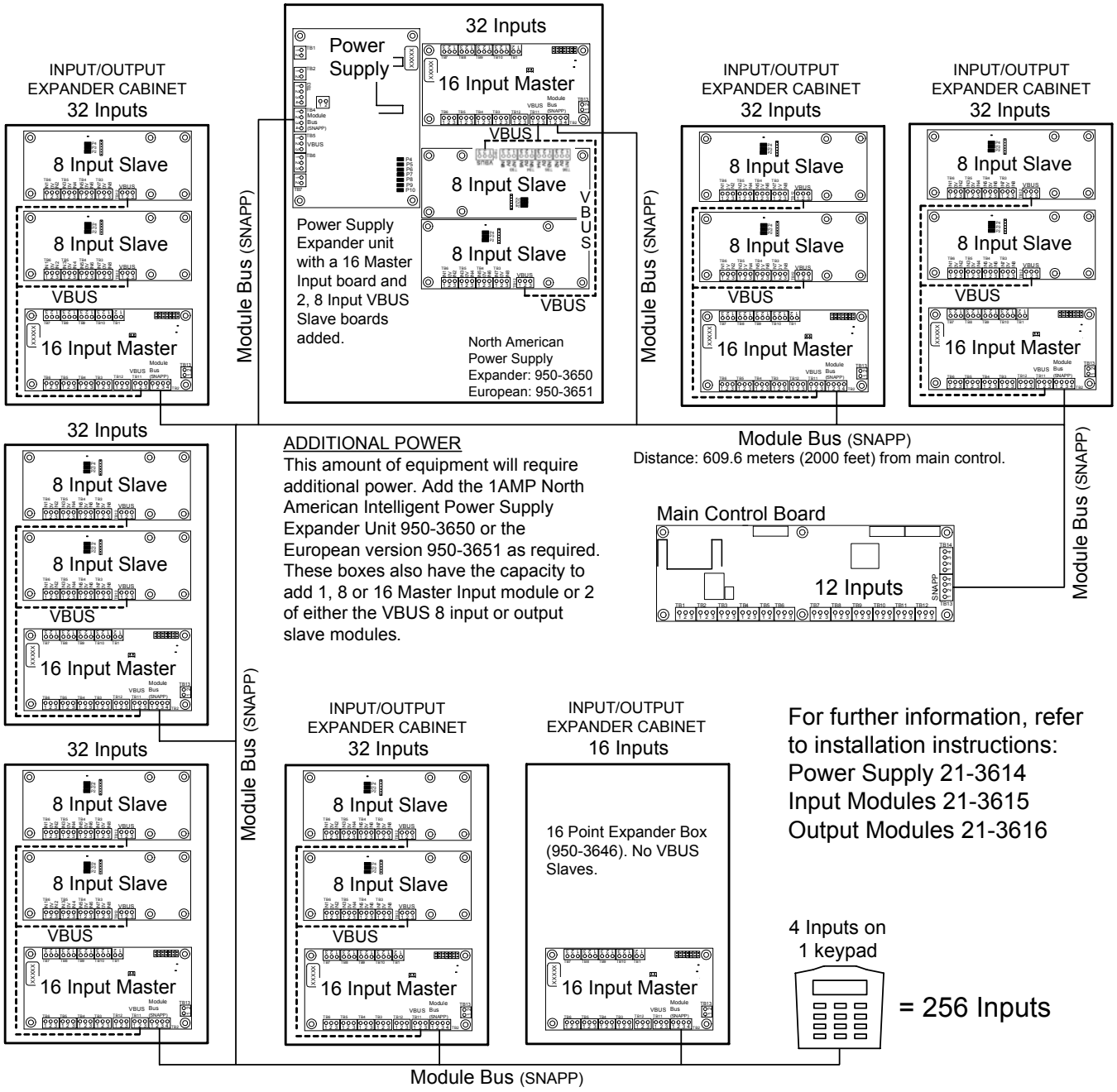
## Connecting 256 inputs on one main control board using VBUS

INPUT/OUTPUT EXPANDER CABINET

This box comes with either an 8 (950-3648) or 16 (950-3646) Input Master module. 8 Input (650-3642) or 8 Output (Transistor Outputs: 650-3640, Relay Outputs 650-3641) VBUS slave boards can be added on the Master module's VBUS connection.

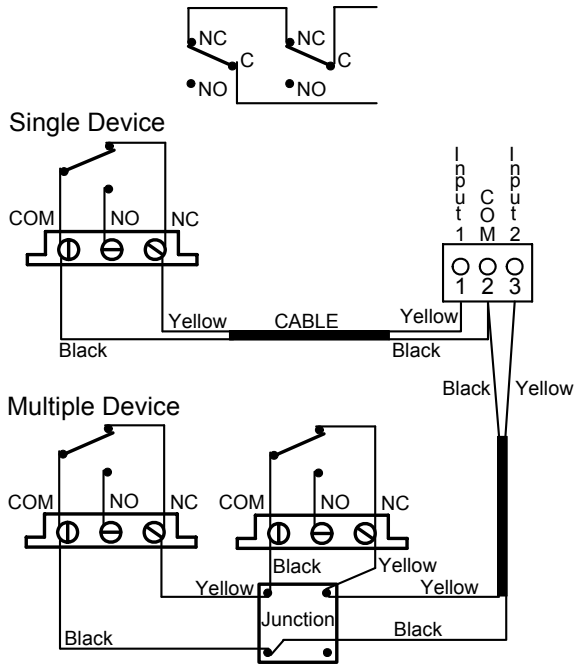
INTELLIGENT POWER SUPPLY EXPANDER CABINET

Additional equipment will require additional power as the main control board will supply a maximum of 750mA auxiliary power for modules, peripherals (e.g. motion, smoke sensors). Calculate the current used by each module (see module current rating chart in Main Control Module diagram) and add the Module Bus (SNAPP) Intelligent 1 AMP Power Supply Expander Unit (North American 950-3650, European 950-3651) as required. A master 8 or 16 input module and 2 VBUS slave modules can be added to the power supply unit in place of an input/output expander cabinet.

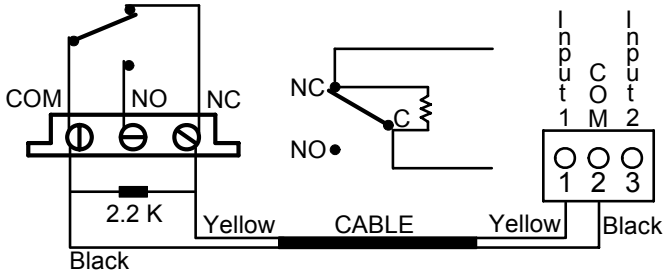

INPUT/OUTPUT EXPANDER CABINET
32 Inputs
8 Input Slave
8 Input Slave
VBUS
16 Input Master
Module Bus (SNAPP)
Power Supply
32 Inputs
16 Input Master
VBUS
8 Input Slave
8 Input Slave
VBUS
Power Supply Expander unit with a 16 Master Input board and 2, 8 Input VBUS Slave boards added.
North American Power Supply Expander: 950-3650
European: 950-3651
INPUT/OUTPUT EXPANDER CABINET
32 Inputs
INPUT/OUTPUT EXPANDER CABINET
32 Inputs
Module Bus (SNAPP)
Distance: 609.6 meters (2000 feet) from main control.
ADDITIONAL POWER
This amount of equipment will require additional power. Add the 1AMP North American Intelligent Power Supply Expander Unit 950-3650 or the European version 950-3651 as required. These boxes also have the capacity to add 1, 8 or 16 Master Input module or 2 of either the VBUS 8 input or output slave modules.
Main Control Board
12 Inputs
SNAPP
INPUT/OUTPUT EXPANDER CABINET
32 Inputs
INPUT/OUTPUT EXPANDER CABINET
16 Inputs
16 Point Expander Box (950-3646). No VBUS Slaves.
For further information, refer to installation instructions:
Power Supply 21-3614
Input Modules 21-3615
Output Modules 21-3616
4 Inputs on 1 keypad
= 256 Inputs
Module Bus (SNAPP)

# Basic Circuit Types

## Normally Closed



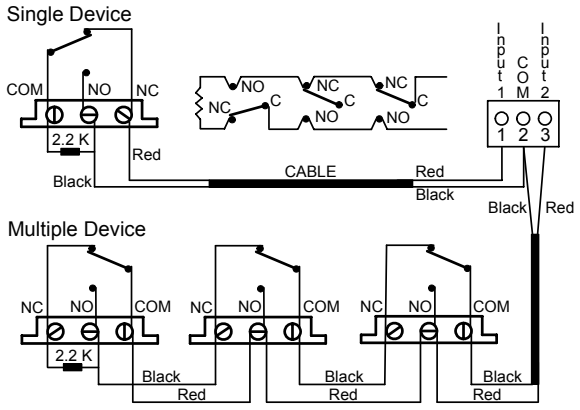

## Normally Closed with 2.2 K End of Line Resistor




- **CAUTION:** This circuit type supplies minimal supervision.
- The end of line resistor, must always be placed at the Device, NOT at the Alarm Input.
- When the Contact is Open, the Control will see the 2.2K-ohm resistor, which equals Alarm.
- If the loop wiring is Open (loss of resistor), the System will indicate a Tamper condition.
- This Circuit Type cannot be used in a Multiple Device application.
- Each device using this alarm loop must be connected to 1 Alarm Input only.

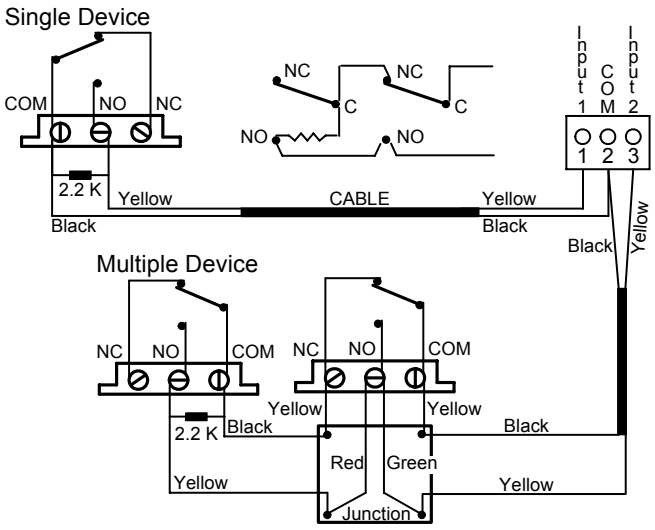
**Sample use:** Could be applied to a device alarm contact that would ordinarily always be closed (e.g. a vibration detector). The 2.2K resistor is not used. If the device is triggered in an off guard (unarmed) state and the contact goes open, a tamper condition is transmitted because there is no resistor. If the device is triggered in an on guard (armed) state, an alarm condition is transmitted because there is no resistor.

## Form "C" Single Resistor EOL



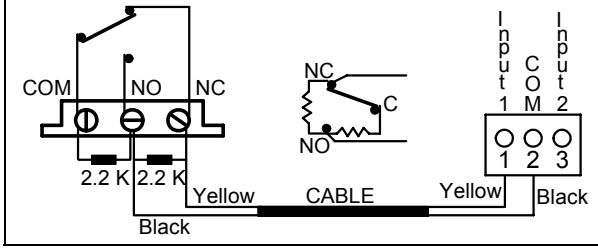

- A short on this Circuit Type equals Alarm.
- A break or a ground in the wiring equals a Tamper.
- Do not reverse the home run's common connection at the contact, as this will also result in a Tamper condition.

## Normally Open with EOL




- A short on this Circuit Type equals Alarm.
- A break or a ground in the wiring equals a Tamper.

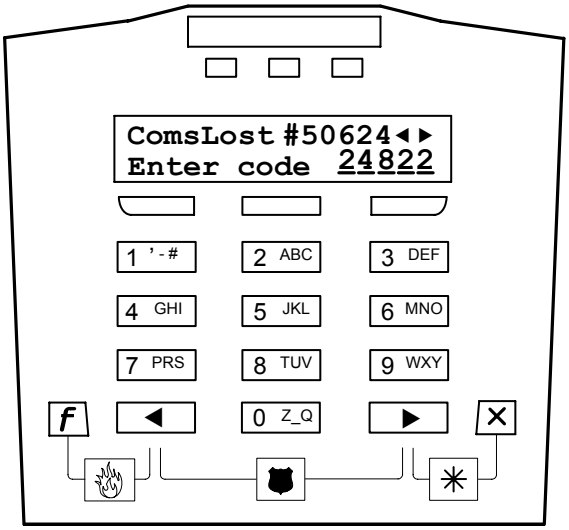
## Form "C" Dual Resistor EOL




- This Circuit Type has 2 end of line resistors, each one 2.2K ohms.
- When the Alarm Input is normal, the Control is looking at both resistors (total resistance: 1.1K ohms).
- When the Alarm Input is Open (not secure), the control will see 2.2 K ohms.
- There can only be 1 device on this alarm loop.

# Understanding How to Program the System Using the LCD Keypad

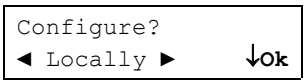
## LCD Keypad:




- When the system is first powered, the LCD keypad will display that its communications are lost (ComsLost). The number to the right of this comment is the keypad's unique serial address.

NOTE: An LCD keypad is the only module that will always display its address when it is first powered. This is the address number that is programmed into the system for it to identify any module. Any module will have its unique address written on a sticker on its circuit board.

- To the right of the keypad's serial number are left and right arrows. These represent the left and right arrow keys lower down on the keypad. These arrow keys are used to browse through menus. If the arrow keys are pressed in this screen, the type of keypad e.g. G-ProxII, the available voltage e.g. 13.135V and the panel firmware version e.g. V1.3 will display.
- The next line of information will ask that the default log on Code: "**24822**" be entered to log on to the system.
- After this number has been entered, the screens will start rotating with different messages. One will state "Prog-Lost!" for program lost because the system presently has no program. Another serial number will appear next to that comment e.g. "07132". This is the serial number of the main control board. If this number is not marked on the board, mark it down to be used later.
- Another screen that will appear will be the non-current date and time which can be reset to be current later. The bottom LCD line will request that a 3 digit ID be entered. Enter the default ID for a service technician: "**000**". "Service, Enter PIN:" will appear. Enter the default service user's pin: "**2482**"
- The next screen will say: "Configure?" and give a selection for the mode in which you want to configure the system. The first selection is "Locally" meaning the system can be configured using the keypad only. Use the left-right arrow keys to toggle between "Remote" for configuring the system with a connection to the Director Configuration Software.
- Press the keypad button below "Ok" when the selection has been made.




Configure Locally

- If the configure locally selection is made, the next screen will ask to "Select region" for the style of system configurations that are required for different places in the world. Use the left-right arrow keys to toggle through them. The selections are: N (North) America, European, U.K., Aus/NZ (Australia, New Zealand) and China/H.K (Hong Kong).

Selecting North American Example

- If North America is selected, the screen will ask the number of users that will be operating the system. Use the left and right arrow keys to toggle through the selections of "20 Users", "100 Users" or "300 Users" for the closest number of users in the system and press Ok.

Example: 20 Users

- The next screen asks "Save Settings?". Select Yes with the arrow keys and press Ok.
- After a few moments, the screen will go momentarily blank. It will then display ComsLost again. Enter the code **24822** again.
- "Push for Menus" will appear with the option to set the system to Stay or On pressing the keypad button below them. Press the right arrow key to browse through the Menu Options. Selections such as Status (condition of system), Bypass (disable a protection point), History (alarm etc. history), My PIN (change your PIN number), Users (edit system users), Test (test the system), Config (edit the system's program), Time (adjust the LCD keypad's Time and Date), Verify (transmit an Okay signal if a false alarm occurred), Arm/Disarm (set protection ON or OFF). Select "Config" and press Ok.
- NOTE: Default MASTER (end) USER code is ID 01 or 001, PIN 7793. Default Service User ID 00 or 000, PIN 2482.
- "Config method" will appear. With the arrows, toggle between "Simplified" or "Advanced" for the process to set up the system as required. If

Simplified is chosen, ordinary language menus will appear to browse through and make selections to make a basic system from. If Advanced is chosen, special menus will appear to customize the system into several unique forms of security requirements.

Logging On to a New UK ACPO System

- After the "CommsLost" keypad screen and 24822 has been entered, the screen will display that the system is in alarm and needs to be re-set.
- Enter the UK service user code: **000** and PIN: **1630**.
- A user code and PIN for a second user will be requested. Enter the Master User default code: **001** and PIN: **7793**.
- The next screen will request the date and time to be entered.
- The next screen will display that the system is in alarm and enter ID to restore it.
- The Master User codes can be entered however, if a service user enters 000, the next screen will request a Pin of the Day to log on. After that is entered, a secondary user code will be requested. The Master user codes can be used again.

UK ACPO Pin of the Day

- The service user will call the Pin of the Day program operator who can enter default "24822" as the new system's default Dealer ID until a unique one can be entered at the keypad or downloaded from the Director software later.
- The service user enters random, 6 digit Pin of the Day number given to them by the operator at the keypad and can then access the system menus and configurations.

Also see Pin of the Day in the Advanced Installation Guide

Remote Connection

- If a Remote connection is selected, the next screen will display a left or right arrow selection for IP or the version of modem board plugged into the main control module (e.g. Bell 103 or World Wide Modem, discussed later). **IMPORTANT:** When one of the modems is used, it must be plugged into the main control module before remote connection screens can be viewed. Press the button below Ok.
- The next screen will ask to "Select country" for the style of system configurations that are required for different places in the world. Use the left-right arrow keys to toggle through them. The selections are: N (North) America, European, U.K., Aus/NZ (Australia, New Zealand) and China/H.K (Hong Kong). Press the button below Ok.
- The next screen will display an entry for a 6 digit unique ID to identify this particular system.
- Press the button below "Save" when the selection has been made.

```
000000
↓Save (unique id)
```

- The next screen will display an entry for a 6 digit third party password. This is a special security number that prevents unauthorized connection to this main control module.
- Press the button below "Save" when the selection has been made.

```
000000
↓Save (3rdPtPass)
```

- Next enter the phone number to contact and get a system program, configuration download from the Director Software computer.

The phone number can be preceded with **P** =pulse dialing (default), or **T** =Tone dialing, and can include **D** =2 sec Delay, **A** =Star key (tone dialing), # = Pound Sign (tone dialing), and/or **W** = Wait for second dial tone. For **T**one dialing, ensure the phone line supports this. As the phone number is entered, the cursor will automatically move to the next character entry position. Use the left and right arrow keys to move the cursor back and forth in the entry. Place the cursor under a character where a blank is desired. Press the "_" selection on the " **0** Z_Q " keypad key to replace the character with a blank space.

- Press the button below "Save" when the selection has been made.

```
_
↓Save (cfg tel #)
```

- When Save is pressed, the main control module will attempt to dial the config PC.

```
Download Config
Please wait......
```

```
Download Config
Dialing......
```

While the main control module is trying to get its download, an asterisk: "✳" will appear between the hour and the minute display on the time and date main screen.

## Manually calling the Director PC from the LCD Keypad:

- This operation is for systems that can communicate with the Director software.
- If the system configurations have been changed example: by the customer to add a new user, it will be necessary to update the Director configurations for the system.

**1)** The system Unique ID and 3rd Party Password have to be programmed in the system if they were not previously. See the Advanced programming guide to program them in Advanced configurations using the keypad. To enable this feature, "Config Dial Out" is set to "1" in Advanced program section S005:10.

**2)** Log on to the keypad as a system or service user.

**3)** Push the right arrow key for Menus.

**4)** Use the left and right arrow keys to browse the menu until "Director" displays. Press Ok.

```
Menu Options
◄ Director ►   ↓Ok
```

**5)** "Director Options", "Update Config" will display. Press Ok.

```
Director Options
◄ Update Cfg ► ↓Ok
```

**6)** "Updating Config, Please Wait" will appear and then change to "Connecting".

```
Updating Config
Please wait......
```

```
Download Config
Connecting......
```

**7)** When the system is communicating with Director, "In Progress" will appear with a rotating bar next to it.

```
Download Config
In Progress.... -
```

**8)** An asterisk: "✳" will appear between the hour and the minute display on the time and date main screen until the communication is complete.

NOTE: This feature is not supported with an external modem.

## Entering and Understanding Simplified Configurations

- Logon to the system as a service user. Default ID: "00 or 000", service user PIN: "2482".

**LCD Screen**

```
Service
Enter PIN: ____
```

- When the control box tamper is activated, a service user has the authority to access system programming.

```
Menu Options
◄ Config   ►   ↓Ok
```

- Using the left and right arrow screen scrolling keys on the keypad scroll the menus until **Config** is displayed. Press Ok.
- "Config method" will display. Select "Simplified" and press Ok. "Configure group?" will display e.g. "Points". Press Ok. "Choose Point by" will display and using the arrow keys, either "Scrolling" the selection or "Direct Entry" (entering the exact point number) will display.
- When the point has been selected and Ok pressed, the current name for the point number will display. The option between Editing or Deleting the point will also display using the arrow keys.
- If Edit is selected, a cursor will flash under the first letter of the point's name. Pressing any Alpha/Numeric key on the keypad will change the letter to the characters on that key. Use the left and right arrow keys to scroll back and forth through the letters/numbers of the name. To create a blank with the cursor under the selected character, press the "0" key until a blank space appears. When ever a satisfactory setting has been made, always press the ↓Save button to retain it in memory.
- When Save is pressed, the next selection for the Point will be the type it is. Scroll through the selections to obtain the one required. Press Save. The next selection will be the Point's circuit type. Scroll through the selections to obtain the one required. Press Save. The next selection will be what Area the point will be assigned to. Scroll through the selections to obtain the one required. Press Save.
- Points after the defaulted settings will be "Undefined" and can be selected and edited to be enabled.
- These procedures for programming each of the simplified program sections will be similar.

# Simplified Configurations

## System

| Siren Time | Main Screen Greeting | PIN Duress | 5 Digit PIN |
|---|---|---|---|
| **Default:** 5 minutes<br>(UK ACPO = 15 min) | **Default:** WELCOME<br>(UK ACPO = "CHUBB SECURITY") | **Default:** Yes<br>(UK ACPO = No) | **Default:** No |

| Enable Wall Tamper | Battery Size | (UK ACPO)<br>**Confirm Alarm Tamper** | Audible Ringback |
|---|---|---|---|
| **Default:** No<br>(UK ACPO = Yes) | **Default:** 070 = 7 Amp hr battery.<br>075 = 7.5 Amp hr<br>170 = 17 Amp hr<br>(UK ACPO = 17.0) | **Default:** 30 min | **Default:** No<br><br>**UL Listed Systems**:<br>Select "Yes" |

| Fast Restore<br>Yes/No | Point Reset Time<br>Select Time | Delay Screen<br>Yes/No |
|---|---|---|
| **Default:** No<br>(UK ACPO = Yes) | **Default:** 60 seconds<br>(UK ACPO = 2 sec) | **Default:** No |

## Communications

| Telco Modem Type<br>Bell 103, 8OPSTU (REDCARE), WW Modem, WW 8OPSTU, None. | Enable Line Fail<br>WW 8OPSTU or 8OP STU must be plugged in. | Line Fail Polarity<br>WW 8OPSTU or 8OP STU must be plugged in.<br>Positive/Negative | Report Account # |
|---|---|---|---|
| **Default:** NA Modem<br>(UK ACPO = WW 8OPSTU) | **Default:** No<br>(UK ACPO = Yes) | **Default:** Positive | **Default:** 000000 |

| Telco Report Mode<br>Not used, Primary, Backup, Dual. | No Blind Dialing<br>Yes/No<br>Dials regardless of detecting a dial tone. | Telco Format<br>SIA Level 2 , CID, | Comms Test Delay<br>Set delay time. |
|---|---|---|---|
| **Default:** Not Used | **Default:** Yes | **Default:** SIA Level 2 | **Default:** 0 sec |

| Primary Telephone Number<br>16 characters | Backup Telephone Number |
|---|---|
| **Default:** blank | **Default:** blank |

A phone number can be preceded with **P** =pulse dialing (default), or **T** =Tone dialing, and can include **D** =2 sec Delay, **A** =Star key (tone dialing)**,** # = Pound Sign (tone dialing), and/or **W** = Wait for second dial tone. For **T**one dialing, ensure the phone line supports this.

| Number of Rings to Answer | Defeat Answering Machine<br>Yes/No | Config Call Back<br>Yes/No |
|---|---|---|
| **Default:** 08 | **Default:** Yes | **Default:** No |

**Areas** ◄ A02 – A16 ► undefined

**A01** Defaults Press ↓Ok to ◄Edit►

| **Area Name** | **Area Entry Delay**<br>Select a time. | **Area Exit Delay**<br>Select a time. | **Exit Delay Mode**<br>Normal<br>Warning Tone Short, Warning Tone Long, Warn & Block (Warning Tone & Block Arming). | **Fail to Exit Mode**<br>Door Close, Push Button, Both, None |
|---|---|---|---|---|
| **Default:** OFFICE<br>(UK ACPO = "AREA DESCRIP") | **Default:**<br>45 Seconds<br>(UK ACPO = 30 sec) | **Default:**<br>60 Seconds | **Default:** Normal<br>(UK ACPO = Warn & Block) | **Default:** Door Close<br>(UK ACPO = Push Button) |

| **STAY on Fail to Exit** | **Alarm on Fail to Exit** | **Exit Delay on Fail to Exit** | **Area Report Mode**<br>Selections:<br>Full, Emergency | **Bell Squawk**<br>None, On Arming, Fail to Arm, Both. |
|---|---|---|---|---|
| **Default:** No | **Default:** No<br>(UK ACPO = Yes) | **Default:** No<br>(UK ACPO = Yes) | **Default:** Emergency | **Default:** None<br>(UK ACPO = Fail to Arm) |

**Modules ◄ M01 – M24 ►**

**M01** Defaults, M02 – M24 undefined.

| **Module Serial #**<br>Enter the 5 digit number from the sticker on the module's circuit board.<br>**NOTE:** When "↓Ok" is pressed after entering the Serial #, you may be transferred out of programming. Return to Module Programming to continue programming the module. | **Module Type** I/O = input / output<br>Selections: Use the left and right arrow keys to browse the module names.<br>Keypad: LCDV2, LCD Plus, LCD-GProx, LCD-ExtRd (external reader),<br>Wireless: WLS, FA400, EE4000,<br>HSC<br>Power: IPSU 1.1AMP<br>Vigil<br>Other<br>Access: Regular V2, Regular V1, TDC, PDC, C2000, IPlus, 2050MIL250, 2050DC,<br>I/O: Regular, E-I/O, IPMUX, 2050IO16, 2050I32, 2050O32<br>Elevator<br>Suite Security: Suite 8 zone, Suite 2 zone |
|---|---|
| **Default:** 00000 | **Default:** LCD-GProx |

| **Number of Inputs**<br>Selections: 00, 04, 08, 12, 16, 20, 24, 32 | **Number of Outputs**<br>Selections: 00, 04, 08, 12, 16, 20, 24, 32 | **Module in Area?**<br>Assign the module to the area it is in. | **Tamper Monitor** | **Exit Delay Level**<br>Stay & On, On Only, None |
|---|---|---|---|---|
| **Default:**<br>08 inputs | **Default:**<br>04 outputs | **Default:**<br>**A01:** OFFICE<br>(UK ACPO = "AREA DESCRIP") | **Default:**<br>Yes | **Default:**<br>Stay & On |

| **Tone Warnings**<br>Yes/No |
|---|
| **Default:**<br>Yes |

| **Annunciate Area Map**<br>(KeyPad tones) | Press the button below "↓Edit " to make changes. Scroll through the areas at the top of the screen using the left and right keypad arrows. When an area appears that needs to cause this keypad in this area to annunciate tones for e.g. alerts, exit tones from the other area, press the keypad button below ↓Yes or ↓No to assign the other area(s) to this keypad. A check mark ✓will appear beside the Yes or No selection. Default: ✓(Yes) for Area 1 |
|---|---|

| | |
|---|---|
| **Arm Disarm Map** (Arm/Disarm other areas) | Press the button below "↓Edit " to make changes. Scroll through the areas at the top of the screen using the left and right keypad arrows. When an area appears that needs to be armed /disarmed from this keypad, press the keypad button below ↓Yes or ↓No to assign the other area(s) to this keypad. A check mark ✓ will appear beside the Yes or No selection. Default: ✓(Yes) for Area 1 |

| | |
|---|---|
| **Exit Delay Map** (what areas will there be an exit delay in) | Press the button below "↓Edit " to make changes. Scroll through the areas at the top of the screen using the left and right keypad arrows. When an area appears that needs to also have an exit delay when the area this keypad is assigned to is armed, press the keypad button below ↓Yes or ↓No to assign the other area(s) to this keypad. A check mark ✓ will appear beside the Yes or No selection. Default: ✓(Yes) for Area 1 |

| **Single Badge Mode** | **Hold Badge Mode** |
|---|---|
| System response when momentarily touching an access card etc. to e.g. an LCD G-Prox keypad.<br>Selections:<br>Tgl (toggle)OFF-ON, TglSTAY-ON, Ext Exit Dly (external exit delay), Work Late, None, Auto logon, Arm ON, Arm ST (Stay) DisarmSTAY, Disarm OFF. | Selections:<br>None, Auto logon, Arm ON, Arm ST (Stay), DisarmSTAY, Disarm OFF, Tgl (toggle) OFF STAY, Tgl OFF-ON, TglSTAY-ON, ExtExitDly (external exit delay), Work Late. |
| **Default:** Auto log on<br>(UK ACPO = Disarm OFF) | **Default:** Tgl OFF-ON<br>(UK ACPO = "Arm ON") |

## Points

Point Types: EE(entry/exit)Door, EE Route, Perimeter, Motion, Fap Motion, Day Warning, Burglary, Fire Class A, Fire 15s (second), Fire 0s (immediate), Hold-up, Aux Alert (auxiliary alert/emergency), Supervisory, Local 24h (hour), Lcl StayOn (Local Stay-On), Lcl Stay20n, Local On Only, undefined.

**FAP:** (False Alarm Preventor) If a FAP input is not OK longer than 10 seconds, an alarm condition occurs. If a FAP input is triggered and immediately resets, a 20 minute timer begins. If the same device is tripped or a different FAP device trips in the same 20 minutes, an alarm occurs.

Circuit Types: NC (normally closed), NC SERIES2K (normally closed with 2.2K End of Line resistor), NO PARALL2K (normally open with 2.2K End of Line resistor), DUAL 2K2 EO (Form "C" Dual 2.2K End of Line resistor )
Circuit Types UK: NO, 2K-ALM 1K-0, Type2 2K2E0, Type2 8K2E0.

North American Point Defaults:

| Point Location | Default Point Type | Default Name | Default Circuit Type | Assigned to Default AREA |
|---|---|---|---|---|
| Point 001, main control board. | Entry/Exit Door | **FRONT DOOR** | NO with EOL | A01, OFFICE |
| Point 002, main control board. | Entry/Exit Route (set to ON) | **LOBBY MOTION** | NO with EOL | A01, OFFICE |
| Point 003, main control board. | Motion (set to ON) | **OFFICE MOTION** | NO with EOL | A01, OFFICE |
| Point 004, main control board. | Motion (set to ON) | **INTR MOTION** (interior motion) | NO with EOL | A01, OFFICE |
| Point 005, main control board. | Motion (set to ON) | **REAR MOTION** | NO with EOL | A01, OFFICE |
| Point 006, main control board. | Perimeter (set to STAY & ON) | **PERIMETER DR** (perimeter door) | NO with EOL | A01, OFFICE |
| Point 007, main control board. | Perimeter (set to STAY & ON) | **OHD** (over head door) | NO with EOL | A01, OFFICE |
| Point 008, main control board. | Entry/ Exit Door | **REAR DOOR** | NO with EOL | A01, OFFICE |
| Point 009, main control board. | Perimeter (set to STAY & ON) | **PERIMETER DR** | NO with EOL | A01, OFFICE |
| Point 010, main control board. | Perimeter (set to STAY & ON) | **PERIMETER DR** | NO with EOL | A01, OFFICE |
| Point 011, main control board. | Perimeter (set to STAY & ON) | **PERIMETER DR** | NO with EOL | A01, OFFICE |
| Point 012, main control board. | Perimeter (set to STAY & ON) | **PERIMETER DR** | NO with EOL | A01, OFFICE |
| Point 013. First keypad alert button. | Fire 0 second, no delay | **KEYPAD FIRE** | NC with EOL | A01, OFFICE |
| Point 014.Second keypad alert button. | Hold-Up | **KEYPAD PANIC** | NC | A01, OFFICE |
| Point 015.Third keypad alert button. | Auxiliary Alert | **KEYPAD EMERG** (emergency) | NC with EOL | A01, OFFICE |
| Point 016 – 256 undefined. | | | | |

UK Point Defaults:

| Point Location | Default Point Type | Default Name | Default Circuit Type | Assigned to Default AREA |
|---|---|---|---|---|
| Point 001, main control board. | Custom # 80 (Command Point, Class: Supervisory. See Custom Point Programming and ACPO in the Advanced Installation Guide, 500-3652 ) | **LCLCMDATEALL** | NO | A01, “AREA DESCRIP” |
| Point 002, main control board. | EE Door | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 003, main control board. | EE Route | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 004, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 005, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 006, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 007, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 008, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 009, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 010, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 011, main control board. | Motion (set to ON) | **CCT DESCRIP** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 012, main control board. | Day Warning | **SIREN TAMPER** | TYPE2 2K2E0 | A01, “AREA DESCRIP” |
| Point 013 – 256 undefined. | | | | |

| Equipment | Enabled or Undefined | Time Delay |
|---|---|---|
| **E01** System Tamper<br>Siren ☐ Off ☐ Stay ✓ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Permanent | 1 second |
| **E02** Low / No Battery<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Enabled | 1 second |
| **E03** AC Mains Failure<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Enabled | 4 hours |
| **E04** No Phone Line<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On<br>UK ACPO =Undefined | Undefined | (5 minutes) |
| **E05** Report Delay<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ☐Off ☐Stay ☐ On | Enabled | 10 minutes |
| **E06** Time Lost<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined |
| **E07** Time Change<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined |
| **E08** Program Edit<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined |
| **E09** Program Error<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined |

| Equipment | Enabled or Undefined | Time Delay |
|---|---|---|
| **E10** Fuse Failure<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Enabled | 1 second |
| **E11** Module (Pod) Trouble<br>Siren ☐ Off ☐ Stay ✓ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Enabled | 1 second |
| **E12** Module (Pod) Battery Low<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Enabled | 1 second |
| **E13** Module (Pod) Program Edit<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined |
| **E14** Module (Pod) Program Error<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined |
| **E15** Output Trouble<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined |
| **E16** HSC, Security IP, Trouble<br>Siren ☐ Off ☐ Stay ☐ On<br>Sonalert ✓Off ✓Stay ✓ On<br>Transmit ✓Off ✓Stay ✓ On | Undefined | Undefined (1 second) |

## Outputs (North America version)

Pre-programmed Output numbers like B001 will display with their pre-programmed code: e.g. S000.07. This is an output code that is programmed in Advanced Programming. Press ↓ok to edit the pre-programmed output using the following simplified output characteristics

```
Select Output?
◄B001►S000.07 ↓ok
```

| Select Output | Select Group (Program Section) | Select Condition | Select Operation |
|---|---|---|---|
| B001 – B128 | System | Fully On, In Alarm, Siren, Fire Cadence, Was In Alarm | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Areas<br>Select Area # | On, Stay 2, Stay 1, Stay 1 and 2, Off, Not On, Not Off, Alarm, Was (In) Alarm | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Protection Points<br>Select Point # | Normal, Not Normal, Day Not Normal, Nite (Night) Not Normal, Alarm, Bypassed, Dly prepro (Delay Preprocess), Tamper, Point Delay, Pos (Positive) Confirm. | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Outputs<br>Select Output # | Real OP (output) On, Equation is True, Manual Command | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Modules<br>Select Module # | On Line, Tamper, Comms Trbl, (Communications Trouble), Battry Trbl (Battery Trouble), User Logged On, | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Equipment Points<br>Select Point # | System Tmpr (Tamper), Low/No Battery, AC Failure, No Phone Line, Report Delay, Time Lost, Time Change, Progr (Program) Edit , Progr (Program) Error, Fuse Fail, Pod (Module) Trouble, Pod Bat (Module Battery) Low, Pod Prg (Module Program) Edit, Pod Prg Err (Module Program Error), Oup Troubl (Output Trouble), HSC Troubl. | Toggle, Normal, Time Delay or Inverted |

North American Output Default

| Select Output | Select Group (Program Section) | Select Area, Point, etc. | Select Condition | Select Operation |
|---|---|---|---|---|
| B001 Relay 1 on motherboard | System | | Fire Cadence | Normal |
| B002 Relay 2 on motherboard | System | | In Alarm | Normal |
| B003 (keypad) | Areas | A01: OFFICE | Function Key 1 on Area 1 1st keypad. Positive Trigger, 10 sec delay.<br>NOTE: A complex output like this must be programmed in Advanced Programming. | Normal |
| B004 – B128 | Undefined | | | |

## Outputs (UK version)

| Select Output | Select Group (Program Section) | Select Condition | Select Operation |
|---|---|---|---|
| B001 – B128 | System | Fully On, In Alarm, Siren, Fire Cadence, Was In Alarm, ACPO Fire, ACPO Attack, ACPO Unconfirmed, ACPO Set, ACPO F/Faul (Fire Fault), ACPO Bypass, ACPO Confirmed, ACPO Siren, ACPO Strobe. | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Areas<br>Select Area # | ACPO Fire, ACPO Attack, ACPO Unconfirmed, ACPO Set, ACPO F/Faul (Fire Fault), ACPO Bypass, ACPO Confirmed, ACPO Siren, ACPO Strobe. | Toggle, Normal, Time Delay or Inverted |

| | | | |
|---|---|---|---|
| B001 – B128 | Protection Points<br>Select Point # | Normal, Not Normal, Day Not Normal, Nite (Night) Not Normal, Alarm, Bypassed, Dly prepro (Delay Preprocess), Tamper, Point Delay, Pos (Positive) Confirm. | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Outputs<br>Select Output # | Real OP (output) On, Equation is True, Manual Command. | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Modules<br>Select Module # | On Line, Tamper, Comms Trbl, (Communications Trouble), Battery Trouble, User Loged On. | Toggle, Normal, Time Delay or Inverted |
| B001 – B128 | Equipment Points<br>Select Point # | System Tmpr (Tamper), Low/No Battery, AC Mains Failure, No Phone Line, Report Delay, Time Lost, Time Change, Progr (Program) Edit , Progr (Program) Error, Fuse Fail, Pod (Module) Trouble, Pod Bat (Module Battery) Low, Pod Prg (Module Program) Edit, Pod Prg Err (Module Program Error), Oup Troubl (Output Trouble), HSC Troubl. | Toggle, Normal, Time Delay or Inverted |

UK Output Default

| **Select Output** | **Select Group** (Program Section) | **Select** Area, Point, etc. | **Select Condition** | **Select Operation** |
|---|---|---|---|---|
| B001 Relay 1 motherboard | System | | 000.66 ACPO Siren | Inverted |
| B002 Relay 2 motherboard | System | | 000.67 Confirmed Alarm (ACPO strobe) | Inverted |
| B003 WW STU | Areas | Area 1 | 001.33 When area Entry / Exit delay is in progress – provides a steady output (STAY & ON). | Normal |
| B004 WW STU | System | | 000.60 Personal ACPO Attack | Normal |
| B005 WW STU | System | | 000.61 ACPO Unconfirmed Alarm | Inverted |
| B006 WW STU | System | | 000.62 ACPO Area Set / Unset | Inverted |
| B007 WW STU | System | | 000.64 ACPO Bypass in Effect | Inverted |
| B008 WW STU | System | | 000.54 Local AC (mains) failure. | Inverted |
| B009 WW STU | System | | 000.65 ACPO Confirmed Alarm | Inverted |
| B010 WW STU | Areas | Area 1 | 001.32 Area is in 'Walk' or 'Hold-up' test. | Inverted |
| B011 – B128 | Undefined | | | |

WW STU = World Wide modem with outputs

## Circuits

Input Circuit Types and Defaults (Also programmable in Advanced Programming using the Advanced Programming Guide, Section S007:01)

North America Circuit Types and Defaults

| **Select Circuit** | **Circuit Name** | **Type** | **Resistor Configurations** (TYPE1 NC, TYPE2 NO, TYPE3 NC Single Series ,TYPE4 NC Single Parallel , TYPE5 NO Single Series , TYPE6 NO Single Parallel ,TYPE7 NC Dual Type 1 , TYPE8 NC Dual Type 2 , TYPE9 NO Dual Type 1 , TYPE10 NO Dual Type 2) | **Custom Resistor Values** |
|---|---|---|---|---|
| C01 | NC | 1 | Normally Closed | No resistor |
| C02 | NC SERIES2K2 | 3 | NC Single (resistor) Series | R1 (ohms)<br>00000 |
| C03 | NO PARALL2K2 | 6 | NO (normally open) Single (resistor) Parallel | R1 (ohms)<br>00000 |
| C04 | DUAL 2K2 EOL | 8 | NC Dual Type 2 | R1 (ohms) R2 (ohms)<br>00000 00000 |

UK Input Circuit Types and Defaults

| Select Circuit | Circuit Name | Type | Resistor Configurations (TYPE1NC, TYPE2 NO , TYPE3 NC Single Series , TYPE4 NC Single Parallel , TYPE5 NO Single Series, TYPE 6 NO Single Parallel, TYPE7 NC Dual Type 1 , TYPE8 NC Dual Type 2 , TYPE9 NO Dual Type 1 , TYPE10 NO Dual Type 2 ) | Custom Resistor Values |
|---|---|---|---|---|
| C01 | N0 | 2 | Normally Open | No resistor |
| C02 | 2 K = ALM 1 K = OK | 8 | Normally closed dual type 2 | R1 (ohms) 00000 R2 (ohms) 00000 |
| C03 | TYPE2 2K2EOL | 8 | NC Dual Type2 | R1 (ohms) 00000 R2 (ohms) 00000 |
| C04 | TYPE2 8K2EOL | 8 | NC Dual Type 2 | R1 (ohms) 00000 R2 (ohms) 00000 |

| **Default User Authority Levels and Abilities** | Master | Supervisor | Employee | Worker | Cleaner |
|---|---|---|---|---|---|
| **Intrusion** | | | | | |
| Emergency Off | ✓ | ✓ | | | |
| Isolate | ✓ | ✓ | | | |
| Bypass | ✓ | ✓ | | | |
| Auto-lift Bypass | ✓ | ✓ | | | |
| Test | ✓ | ✓ | | | |
| Service Test | ✓ | | | | |
| Silence Alarm | ✓ | ✓ | ✓ | | ✓ |
| Status | ✓ | ✓ | ✓ | ✓ | ✓ |
| History | ✓ | ✓ | | | |
| Function Key Authorization | ✓ | ✓ | | | |
| Work Late | ✓ | ✓ | ✓ | | ✓ |
| Suspend Schedule | ✓ | ✓ | | | |
| On | ✓ | ✓ | ✓ | ✓ | ✓ |
| Off | ✓ | ✓ | ✓ | | ✓ |
| Stay | ✓ | ✓ | ✓ | | ✓ |
| Auto Disarm to Off | ✓ | ✓ | | | |
| Auto Disarm all Areas | ✓ | ✓ | | | |
| **Access** | | | | | |
| Access when Area is Off/On/Stay | ✓ | ✓ | ✓ | ✓ | ✓ |
| Escort | | ✓ | | | |
| Master Override | ✓ | | | | |
| Reset Door Alarm | ✓ | ✓ | | | |
| Door Command | ✓ | ✓ | ✓ | | |
| Class A | ✓ | ✓ | ✓ | ✓ | ✓ |
| Class B | ✓ | ✓ | ✓ | ✓ | ✓ |
| Class C | ✓ | ✓ | ✓ | ✓ | ✓ |

# Diagnostics

The system is capable of self trouble shooting itself which can be helpful to the technician in determining causes of various faults.

- With the control box tamper activated, log on to the system as a service user. E.g. Default ID: “000”, service user PIN: “2482” or “7378” if the panel has communicated with the Director Software.
  NOTE: If the system Feature Set is 5 or greater, keypad programming can not be done. Programming can only be done with the Director Software. See the Advanced Installation Guide 500-3652 for further information.

**LCD Keypad Screen**

```
Menu Options
◄ Status   ►   ↓Ok
```

- Using the left and right arrow screen scrolling keys on the keypad scroll the menus until **Status** is displayed. Press Ok.

```
Status Options
◄ System   ►   ↓Ok
```

- Using the left and right arrow keys on the keypad, the Status options can be scrolled to display several system conditions. When the desired one to view is displayed, press Ok.

## Keypad Status Diagnostic Selections

**System:** displays general system conditions, tampers, faults etc.

**Points:** displays area’s set armed levels, input point conditions.

**iSNAPP:** displays conditions of modules on the module bus and the bus itself.

**Modem:** displays the condition of a modem connected to the system.

**Licns:** the available features enabled through the system License Agreement.

**Bell 103:** the condition of a communication land line connected to the system.

**PnlDbg** (Panel Debug): Stack (firmware related), Timing, Inputs, P. Supply (power supply), 8 OP STU (8 output subscriber terminal unit), BCapl Err (output error), DOC Info, Voltages, Watch Dog.

**SIP Com:** condition of Security IP Communications.

**Outputs:** output conditions.

# Underwriters' Laboratories Inc. (U.L.) Listed systems: Notes and Requirements

### Installation Notes

- For all U.L. Listed applications the auxiliary power available is 1.0A.
- A U.L. Listed power transformer (16.5 V. 40 VA. class 2) must be used on this system (Amseco model XP-1640 or equivalent).
- For U.L. Listed residential applications a listed siren (Ademco model 747 or equivalent) must be used.
- For UL Listed residential applications a listed siren supervision module (FBII model BSSM or equivalent) must be used.
- For U.L. Listed non-residential applications a listed bell and bell housing (Ademco model AB12M, Rothenbuhler model 5110 or equivalent listed) must be used.
- For U.L. Listed non-residential applications the control panel must be of the type in an attack resistant enclosure.
- Ground start modules are not permissible for residential fire alarm systems in accordance with NFPA 72.
- The bell / siren must be located where it can be heard by the person or persons responsible for maintaining the security system during the daily arming cycle.
- Control units intended to be located outside of the complete vault, a complete safe, or an extent number 1 stockroom, shall be protected with a attack sensor (Sentrol p/n 573-1006 or equivalent).
- "*" keypad button designates an alert signal. Do not program as a fire or burglary signal.
- Audible alarm designations:
  Fire – 3-pulse temporal,
  Burglary – Steady,
  Alert – Beeping.

### Programming Notes

- For central station and police connected systems the U.L. dialing option (including closing ring back feature) must be turned ON – (refer to System Simplified Configurations: "Audible Ringback" and select Yes).
- Initiating circuits for residential Grade A burglary or fire must be supervised with a standard end of line 2.2 KΩ resistor PN 705-4250. Furthermore, all fire initiating circuits must be programmed for no delay – (refer to Points Simplified Configurations: Fire - immediate).
- For commercial installations, the control box actuator must be programmed for full reporting and siren activation; Equipment Simplified Configurations: E01, all fields must be turned ON. This will allow the control unit that contains the DACT (Digital Alarm Communicator Transmitter) to be fully protected 24 hours a day.
- The control panel battery must be supervised for failures. Activate the battery monitoring in Equipment Simplified Configurations: E02 and enable all fields for the keypad tone and transmissions to the monitoring station.
- Remote programming must be disabled. U.L. does not list systems with active upload / download capabilities. For listed installations in the "Powering on the System for the First Time" – "Remote Connection" section of this manual, do not program a unique system I.D. number and do not program a configuration telephone number. The system will no longer be up / downloadable.
- The minimum siren time required for Listed systems is as follows:
  Household fire and burglary: 4min.
  Bank safe and vault: 5min
  Mercantile: 15min
  Make these selections in System Simplified Configurations: "System Time".
- System shall be programmed to give priority as follows:
  1. Fire alarm and industrial supervision where a risk of injury to persons, or damage or destruction of property may be involved.
  2. Panic alarm.
  3. Burglar alarm.
  4. Fire –alarm supervisory.
  5. Burglar-alarm supervisory.

### Entry & Exit Delays

The **maximum entry delay time** for **commercial** systems is **45** seconds.

The **maximum exit delay time** for **commercial** systems is **60** seconds.

The **maximum entry delay time** for **residential** systems is **45** seconds.

The **maximum exit delay time** for **residential** systems is **60** seconds.

### Testing

**Weekly testing** of the bell/siren is required. Please instruct your customer to use the TEST feature. For an LCD keypad enter a valid code, select the **TEST** menu and then select the **SYSTEM** option. **Yearly testing** of communication formats is required. This is done by enabling the communications test a minimum of one year or a shorter duration. Set the "Comms Test Delay" in Simplified Configurations for the desired time.

### Partitioned Systems

For **partitioned systems** the protected area must be under the responsibility of one ownership and management. This may be a group of buildings attached or unattached and may even have different

addresses but are under the responsibility of someone having mutual interest (other than the alarm installing company). This does not apply to strip mall applications where each independent business must have their own separate alarm system.
An example for a commercial partitioned system would be a business that has an OFFICE area and a WAREHOUSE area in a building where each area can be armed or disarmed independently.
Residentially, systems can be partitioned so that the GARAGE area is armed separately from the HOUSE. Each of the above examples would be under the sole responsibility of a single owner.
For partitioned systems, the “Report Delay” must be enabled (Equipment Simplified Configurations: E05). This will annunciate the failure to communicate on the keypads in all partitions.
The bell and power supply must be in a protected area including partitioned systems.

**Grades of Service - U.L. Listed systems**

In addition to the general requirements listed above please note the following:

A. The commercial bell and bell housing will be required for Grade A local and police station connect.
B. The commercial bell is required for Grade B central station.
C. The digital communicator and IP Module is required for standard line security in local, police station connected and central station systems.
D. 72 hours of standby power is required for Banks, Safes and Vaults in case of failure of the mains A.C.

BURGLAR ALARM (LOCAL)

1. A Listed Local bell such as Ademco Model AD10-12M bells, Rothenbuhler Model 5110 and Grade A bell housing shall be used.
2. The maximum exit delay time shall not exceed 60 s and the maximum entry delay time shall not exceed 45 s.
3. The digital alarm communicator transmitter shall be enabled in local alarm installations as it provides indication of low battery transmission following primary loss of power.
4. One 7 Ah battery shall be used to provide the 4 h standby time followed by 15 min of alarm. A minimum 15 min alarm period shall be programmed.
5. The maximum total current draw from auxiliary, snapp, and outputs 1 and 2 combined shall not exceed 1.0A.
6. Bell plus all other loads must never exceed 1.0 Amps.
7. The system shall be housed in the Model 2912 attack resistant enclosure.
8. The bell test shall be enabled.

BURGLAR ALARM (MERCANTILE SAFE AND VAULT)

1. Same as local burglar alarm above.
2. One 7 Ah battery shall be used to provide the 24 h standby time followed by 15 min of alarm and extended power loss of 24 h.
3. The leads providing operating power to the alarm sounding device shall be electrically and mechanically protected as required in the Standard for Installation and Classification of Mercantile and Bank Burglar-Alarm Systems, UL 681, or the circuit shall be constructed so that the system is not defeated by cutting or short-circuiting connections between the control unit and the alarm housing.
4. If the system makes provision for connection of vault or safe wiring to the same circuit and to the same alarm housing used with premises wiring on the surrounding premises, tampering with the premises wiring shall not defeat the safe or vault wiring.
5. All systems shall employ a closed-circuit cable for connecting the safe or vault to the alarm housing so that an alarm is produced if the cable is severed or disconnected.
6. When the system is placed on duty, a timer in the system shall prevent the turning off, prior to a time set by the user, of the door protection and of other circuits that are inoperative during the open period. The timer shall be capable of covering a closed period of at least 96 hours (4 days). See Programming Section.
7. The door protection and other circuits that are inoperative during the open period shall be arranged so that they are placed on duty manually at the time of closing or automatically by the timer within 30 minutes after closing of the door and setting of the system for the closed period.
8. The requirements of 6 and 7 may be provided by a 7 day (1 week) timer that will automatically place the protection on duty not later than 10 p.m. and remove it no sooner than 6 a.m. the next business day. These times may be revised if they conflict with normal business hours of the protected vault or safe. The timer shall automatically maintain the protection on duty on Sundays and holidays. An electrically protected key or combination control shall be provided for the user to change the ON or OFF times and to adjust the holiday carry-over as required. See Programming Section.
9. The main protective circuits, linings, and attachments on the safe or vault, control units, and alarm housing shall be of the normally closed circuit fully supervised type.
10. Systems employing sound-, vibration-, or proximity-detector systems shall include provision for testing the operation of detectors and all associated relays and circuits without sounding the alarm.

11. Provision shall be made for a separate test of detector in each safe or vault connected to a single control unit.
12. A mechanical ringer shall give an indication automatically to the user when only 5 minutes operating power remains in the sounding device. See Programming Section – Low Battery.
13. There shall be provision for testing or automatic meter supervision over all sources of electrical energy. If testing is used, it is to be made under load with the sounding device operating.
14. To be installed with UL Listed high security cable such as Beldon model 9512, 8444.

BURGLAR ALARM (BANK SAFE AND VAULT)

1. Same as local burglar alarm above except installed with Listed, Rothenbuhler Engineering, Model 5110 Electronic Sounding Device.
2. One 17 Ah battery shall be used to provide the 72 h standby time followed by 15 min of alarm and extended power loss of 72 h.

BURGLAR ALARM (POLICE CONNECT) GRADE A-DACT+BELL, HIGH LINE SECURITY (AA) – PACKET SWITCHED DATA NETWORK

Same as local burglar alarm above. System supplies standard line security (DACT) when used with IP Module 650-9060 as defined in UL 365.

BURGLAR ALARM (CENTRAL STATION) GRADE C-DACT, GRADE AA – PACKET SWITCHED DATA NETWORK, GRADE B – DACT+ GRADE A BELL+BELL HOUSING

Same as local burglar alarm above. The system shall be programmed to transmit the required opening and closing signals. The system shall be programmed to transmit the required opening and closing signals.

BURGLAR ALARM (PRORIETARY) GRADE A - DACT, GRADE A – PACKET SWITCHED DATA NETWORK

Same as Central Station.

HOUSEHOLD FIRE ALARM

1. If any fire alarm circuits are present on the zone expansion devices, the Amseco Model PAL-328N trouble annunciating device shall be connected to an open collector output programmed to activate if the bus fails. The device provides supervision of the remote fire alarm initiating circuits.
2. A Listed audible signaling device suitable for fire, rated to operate over the range of 11.0 to 12.3 V shall be used.
3. The maximum total current draw from auxiliary, snapp, and outputs 1, 2, combined shall not exceed 1.0A.
4. Siren plus all other loads must never exceed 1.0 A.
5. System shall be connected to a Listed smoke detector rated to operate over the range of 11.0 to 12.3 V dc. The last detector on the initiating circuit shall be a Listed ESL Model 449CTE with built-in end-of-line relay. The circuit shall also be terminated with a Model 166-6841 end-of-line resistor.

HOUSEHOLD BURGLAR ALARM

1. Refer to Grade A local burglar alarm above for maximum standby and loading conditions.
2. Maximum entrance delay time shall not exceed 45s.
3. System shall employ a Listed-sounding device rated to operate over the range of 11.0 to 12.3 V dc.
4. All zones shall be programmed to be supervised with a 2.2 kilohm end-of-line resistor.
5. The system shall be housed in the Model 6801 enclosure.

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